

Appl. No. 10/506,348
Preliminary Amendment Dated September 1, 2004
Reply to Office Action of September 1, 2005
Docket RD8145USPCT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A method of making a polyamide mixed yarn comprising: simultaneously spinning a first group of filaments of a first polyamide and a second group of filaments of a second polyamide different from the first polyamide; combining the first and second groups of filaments through an air interlacing jet; and winding up the interlaced filaments.

Claim 2 (withdrawn): A method according to claim 1, wherein the first polyamide has a titanium dioxide content less than 0.1% and preferably less than 0.01% by weight and the second polyamide has a titanium dioxide content greater than 0.3% and preferably greater than 1.0% by weight.

Claim 3 (withdrawn): A method according to claim 1 or 2, wherein the first polyamide and the second polyamide have different dyeing characteristics with anionic dyes or cationic dyes.

Claim 4 (withdrawn): A method according to claim 3, wherein the first polyamide and the second polyamide differ by at least 8 mols per 10⁶g in the concentration of amine end groups (AEG).

Claim 5 (withdrawn): A method according to any preceding claim, wherein the first polyamide is a cationic-dye polyamide and the second polyamide is an anionic-dye polyamide.

Claim 6 (withdrawn): A method according to any preceding claim, wherein the filaments of the first polyamide and the filaments of the second polyamide in the product yarn exhibit a difference of at least 10% in their boiling water shrinkage values as hereinbefore defined.

Claim 7 (withdrawn): A method according to any preceding claim, wherein the amine component of the first polyamide comprises hexamethylene diamine and the second polyamide is a copolymer in which the amine component consists comprises a mixture of

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hexamethylene diamine with at least 20% by weight of methyl pentamethylene diamine based on the total weight of diamine.

Claim 8 (withdrawn): A method according to any preceding claim, wherein one of the said groups of filaments is has a circular filament cross-section and the other of the said groups of filaments has a non-circular filament cross-section.

Claim 9 (withdrawn): A method according to claim 8, wherein the non circular filaments have an individual filament decitex of greater than 2.5 and the circular filaments have individual decitex less than 2.

Claim 10 (withdrawn): A method according to claim 9, wherein the non-circular filaments are trilobal with modification ratio greater than 1.2 and less than 2.4.

Claim 11 (withdrawn): A method according to any preceding claim, wherein the first group of filaments is bright and trilobal with filament decitex greater than 2.5, modification ratio between 1.4 and 1.7 and made with basic dye polymer and the second group of filaments is dull and circular with filament decitex less than 2 and made with acid dye polymer.

Claim 12 (withdrawn): A method according to any preceding claim, further comprising the step of texturing the mixed polyamide yarn by false twist texturing or airjet texturing.

Claim 13 (withdrawn): A method according to any preceding claim, wherein the yarn is wound up at a speed of at least 3000m/min

Claim 14 (withdrawn): A method according to claim 13, wherein the yarn is wound up substantially without an intermediate drawing step, whereby the yarn is a partially oriented yarn (POY).

Claim 15 (withdrawn): A method according to claim 13, wherein the yarn undergoes an intermediate drawing step before it is wound up.

Claim 16 (withdrawn): A method according to any preceding claim, wherein the yarn has a tenacity of from about 25 to about 65 cN/tex and an elongation to break of from about 20 to about 90%.

Claim 17 (withdrawn): A mixed polyamide yarn obtainable by a method according to any preceding claim comprising a first group of filaments of a first polyamide interlaced with a second group of filaments of a second polyamide different from the first polyamide.

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Claim 18 (withdrawn): A mixed polyamide yarn according to claim 17 which is a flat yarn.

Claim 19 (withdrawn): A mixed polyamide yarn according to claim 17 which is a textured yarn.

Claim 20 (withdrawn): A textile fabric comprising a yarn according to claim 17, 18 or 19.

Claim 21 (withdrawn): A textile fabric according to claim 20 which has been dyed with an anionic dyestuff.

Claim 22 (withdrawn): A textile fabric according to claim 20 which has been dyed with both cationic and anionic dyestuffs.

Claim 23 (withdrawn): A garment comprising a fabric according to claim 20, 21 or 22 in a visible portion thereof.

Claim 24 (new): A method according to claim 1, wherein the first polyamide has a titanium dioxide content less than 0.1% and the second polyamide has a titanium dioxide content greater than 0.3.

Claim 25 (new): A method according to claim 24 wherein the first polyamide has a titanium dioxide content less than 0.01% by weight and the second polyamide has a titanium dioxide content greater than 1.0% by weight.

Claim 26 (new): A method according to claim 24, wherein the first polyamide and the second polyamide have different dyeing characteristics with anionic dyes or cationic dyes.

Claim 27 (new): A method according to claim 26 wherein the first polyamide and the second polyamide differ by at least 8 mols per 10^6 g in the concentration of amine end groups (AEG).

Claim 28 (new): A method according to claim 24, wherein the first polyamide is a cationic-dye polyamide and the second polyamide is an anionic-dye polyamide.

Claim 29 (new): A method according to claim 24, wherein the filaments of the first polyamide and the filaments of the second polyamide in the product yarn exhibit a difference of at least 10% in their boiling water shrinkage values as hereinbefore defined.

Claim 30 (new): A method according to claim 24, wherein the amine component of the first polyamide comprises hexamethylene diamine and the second polyamide is a copolymer in which the amine component consists comprises a mixture of hexamethylene diamine with at least 20% by weight of methyl pentamethylene diamine based on the total weight of diamine.

Claim 31 (new): A method according to claim 24, wherein one of the said groups of filaments is has a circular filament cross-section and the other of the said groups of filaments has a non-circular filament cross-section.

Claim 32 (new): A method according to claim 31, wherein the non circular filaments have an individual filament decitex of greater than 2.5 and the circular filaments have individual decitex less than 2.

Claim 33 (new): A method according to claim 32, wherein the non-circular filaments are trilobal with modification ratio greater than 1.2 and less than 2.4.

Claim 34 (new): A method according to claim 24 wherein the first group of filaments is brighter than the second group of filaments and the first group of filaments is trilobal with filament decitex greater than 2.5, modification ratio between 1.4 and 1.7 and made with basic dye polymer and the second group of filaments is duller than the first group of filaments and is circular with filament decitex less than 2 and made with acid dye polymer.

Claim 35 (new): A method, of claim 1, further comprising the step of texturing the mixed polyamide yarn by false twist texturing or airjet texturing.

Claim 36 (new): A method according to claim 1, wherein the yarn has a tenacity of from about 25 to about 65 cN/tex and an elongation to break of from about 20 to about 90%.

Claim 37 (new): A mixed polyamide yarn obtainable by a method according to claim 1 comprising a first group of filaments of a first polyamide interlaced with a second group of filaments of a second polyamide different from the first polyamide.

Claim 38 (new): A polyamide mixed yarn simultaneously spun from a first group of filaments of a first polyamide and a second group of filaments of a second polyamide

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wherein the first and second groups of filaments are air interlaced and wherein the first polyamide contains less than 0.1% by weight titanium dioxide and the second polyamide contains more than 0.3% by weight titanium dioxide.

Claim 39 (new): A textile fabric comprising the yarn of claim 38.

Claim 40 (new): A garment comprising the textile fabric of claim 38.

---Replacement Sheet---

1. A method of making a polyamide mixed yarn comprising: simultaneously spinning a first group of filaments of a first polyamide and a second group of filaments of a second polyamide different from the first polyamide; combining the first and second groups of filaments through an air interlacing jet; and winding up the interlaced filaments.
2. A method according to claim 1, wherein the first polyamide has a titanium dioxide content less than 0.1% and the second polyamide has a titanium dioxide content greater than 0.3.
3. A method according to claim 2, wherein the first polyamide has a titanium dioxide content less than 0.01% by weight and the second polyamide has a titanium dioxide content greater than 1.0% by weight.
4. A method according to claim 2, wherein the first polyamide and the second polyamide have different dyeing characteristics with anionic dyes or cationic dyes.
5. A method according to claim 4, wherein the first polyamide and the second polyamide differ by at least 8 mols per 10^6 g in the concentration of amine end groups (AEG).
6. A method according to claim 2, wherein the first polyamide is a cationic-dye polyamide and the second polyamide is an anionic-dye polyamide.
7. A method according to claim 2, wherein the filaments of the first polyamide and the filaments of the second polyamide in the product yarn exhibit a difference of at least 10% in their boiling water shrinkage values as hereinbefore defined.
8. A method according to claim 2, wherein the amine component of the first polyamide comprises hexamethylene diamine and the second polyamide is a copolymer in which the amine component consists comprises a mixture of hexamethylene diamine with at least 20% by weight of methyl pentamethylene diamine based on the total weight of diamine.
9. A method according to claim 2, wherein one of the said groups of filaments is has a circular filament cross-section and the other of the said groups of filaments has a non-circular filament cross-section.

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Appendix

—Replacement Sheet—

10. A method according to claim 9, wherein the non circular filaments have an individual filament decitex of greater than 2.5 and the circular filaments have individual decitex less than 2.

11. A method according to claim 10, wherein the non-circular filaments are trilobal with modification ratio greater than 1.2 and less than 2.4.

12. A method according to claim 2, wherein the first group of filaments is brighter than the second group of filaments and the first group of filaments is trilobal with filament decitex greater than 2.5, modification ratio between 1.4 and 1.7 and made with basic dye polymer and the second group of filaments is duller than the first group of filaments and is circular with filament decitex less than 2 and made with acid dye polymer.

13. A method, of claim 1, further comprising the step of texturing the mixed polyamide yarn by false twist texturing or airjet texturing.

14. A method according to claim 1, wherein the yarn has a tenacity of from about 25 to about 65 cN/tex and an elongation to break of from about 20 to about 90%.

15. A mixed polyamide yarn obtainable by a method according to claim 1 comprising a first group of filaments of a first polyamide interlaced with a second group of filaments of a second polyamide different from the first polyamide.

16. A polyamide mixed yarn simultaneously spun from a first group of filaments of a first polyamide and a second group of filaments of a second polyamide wherein the first and second groups of filaments are air interlaced and wherein the first polyamide contains less than 0.1% by weight titanium dioxide and the second polyamide contains more than 0.3% by weight titanium dioxide.

17. A textile fabric comprising the yarn of claim 16.

18. A garment comprising the textile fabric of claim 16.